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Inside This Issue:

Marshall Team Partners with U.S. Space & Rocket Center to Honor Native American Heritage [page 2](#)



Marshall Center Team Gives Back on CFC Field Trips [page 3](#)



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The Marshall Star is published every Wednesday by the Public and Employee Communications Office at the George C. Marshall Space Flight Center, National Aeronautics and Space Administration. The Star does not publish commercial advertising of any kind.

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Orion Flight Test Hardware Thrive Under Pressure

By Megan Davidson

Hardware that will keep harmful gases away from the Orion spacecraft during its first trip to space proved it won't bend under pressure during a recent test at NASA's Marshall Space Flight Center.

The diaphragm for Exploration Flight Test (EFT)-1 was joined to an adapter prototype for pressurized testing. The adapter will connect Orion to a United Launch Alliance (ULA) Delta IV rocket being

See Orion Hardware on [page 2](#)



Marshall Center engineers perform a proof pressure test on the diaphragm, affixed to an adapter prototype. The test verifies the hardware can withstand flight conditions. (NASA/MSFC/Fred Deaton)

Santa Claus Joins Marshall Tree-Lighting Fun

Children from NASA's Marshall Space Flight Center Child Development Center greet Santa on the front grounds of Building 4200 with holiday lights provided by the Marshall Exchange during the center's holiday tree-lighting ceremony Dec. 2. (NASA/MSFC/Emmett Given)



Marshall Team Partners with U.S. Space & Rocket Center to Honor Native American Heritage



Team members from NASA's Marshall Space Flight Center recognized Native American Heritage month at a U.S. Space & Rocket Center event Nov. 26. From left, Anthony Lett, from the Cherokee Nation; Charles Mespeth, Sioux; Taryan Walking Eagle, of Sioux, Choctaw and Cherokee heritage; William Mespeth; Willy Love, assistant director of Marshall's Office of Diversity & Equal Opportunity; Little Big Mountain, of Comanche and Mohawk heritage; Cindy Spidel of the Spacecraft & Vehicle Systems Department; Laura Alcorn, from the Blackfoot Confederacy; and Debra Grissom of Marshall's Facilities Management Office. (NASA/MSFC/Fred Deaton)



Fifth grade students from Madison and Limestone County schools pause to listen and learn from Little Big Mountain, a member of the Comanche and Mohawk nations, during a celebration honoring Native American Heritage at the U.S. Space & Rocket Center on Nov. 26. (NASA/MSFC/Fred Deaton)

Orion Hardware *Continued from [page 1](#)*

constructed at ULA's facility in nearby Decatur.

For the test, the adapter was sealed and a vacuum pump was connected to the diaphragm. The vacuum pressure simulates atmospheric conditions the hardware may experience during the mission. To see a video of the test, click [here](#).

"Pressure testing helps us validate the design and integrity of the hardware, ensuring that it is flight ready," said Brent Gaddes, Spacecraft & Payload Integration Adapter Subsystem manager at the Marshall Center.

For EFT-1, Orion will travel to an altitude of approximately 3,600 miles above the Earth's surface. This flight test will launch Orion farther than any spacecraft built for humans has gone in more than 40 years. It also will provide engineers with important data about the adapter's performance before it is flown in 2017 on NASA's new heavy-

lift launch vehicle, the Space Launch System (SLS). Marshall manages the SLS Program for the agency.

"It's always exciting to test hardware, especially flight hardware," said Dee Vancleave, lead test engineer for the pressure test. "Early next year, we will be performing a structural qualification test on the spacecraft adapter. It's very busy in the test world."

Now that pressure testing is complete, the diaphragm will be put into the flight adapter, and cables will be installed.

EFT-1 is scheduled to launch in September 2014 from Space Launch Complex 37 at Cape Canaveral Air Force Station in Florida.

Davidson, an ASRC Federal/Analytical Services employee, supports the Office of Strategic Analysis & Communications.

Marshall Center Team Gives Back on CFC Field Trips

Marshall Space Flight Center team members meet one of the young horses at the [Happy Trails Therapeutic Riding Center](#) during a Combined Federal Campaign, or CFC, Bus Tour. Happy Trails uses horses to improve the physical and emotional lives of children and adults with disabilities. Riding and caring for Happy Trails horses helps children and adults with special needs overcome day-to-day challenges. The CFC tours provide the workforce opportunities to visit various non-profit Madison County organizations to learn about the many things these charities do for members of the community. (NASA/MSFC/Fred Deaton)



Bill Powell, reliability and quality assurance engineer for the Marshall Center's Safety & Mission Assurance Directorate, left in the blue hard hat, and Rick Maehlmann, a liquid propulsion systems engineer with Marshall's Engineering Directorate, help build a new home with [Habitat for Humanity](#) in Huntsville as part of the Marshall Center's CFC Community Service Days. Habitat, a non-profit group that receives funding from CFC, works to provide decent, affordable places to live for members of the community, and invites the public to help with the work, regardless of ability. CFC Community Service Days give members of the Marshall Center team a variety of ways to donate time and energy to help local, non-profit agencies serve the community. To see the full schedule and list of organizations or to sign up for a shift, visit the [CFC ExplorNet page](#). (NASA/MSFC/Emmett Given)

Tim Flores, left, stages integration manager with the Space Launch System (SLS) Program; and D.K. Hall, core stage lead also with SLS, help haul mulch at the CASA Community Garden in Huntsville as part of the Marshall Center's CFC Community Service Days. [CASA -- Care Assurance System for the Aging and Homebound](#) -- is a non-profit agency providing services that help aging and homebound individuals maintain their independence, health and safety. The CASA Garden is one of the oldest volunteer driven community gardens in the state, the bounty of which goes to the people CASA helps. (NASA/MSFC/Emmett Given)



CFC Donations Surging, But Still Short of Goal

Contributions and pledges for the Marshall Space Flight Center's annual Combined Federal Campaign charity drive have reached 60 percent of the \$700,000 goal. CFC committee members want to improve on the 31 percent participation rate before the campaign ends in mid-January. Visit the [CFC page on ExplorNet](#) for details on how to help the many charities in need by making a contribution or volunteering.



Collaboration Day Dec. 12 to Showcase Marshall Partnerships

By Shannon Ridinger

NASA's Marshall Space Flight Center will host the second annual Marshall Collaboration Forum on Dec. 12 at the U.S. Space & Rocket Center's Davidson Center. The forum, "Partnerships for the Future," is designed to encourage collaboration among industry, academia and government agencies.

The event will feature panel discussions and speakers from across industry and the Marshall Center. Representatives from the center's Flight Programs and Partnerships Office, the Office of Strategic Analysis & Communications and the Technology Transfer Office will be available with information on the center's core capabilities, partnering opportunities, how to do business with the Marshall Center, and facilities available at the center for use by partners.

Speakers for the event will include managers and representatives from the Marshall Center, industry and other government agencies. Teresa Vanhooser, Marshall's deputy center director; Jody Singer, manager of the Flight Programs and Partnerships Office; and Bobby

Watkins, director of the Office of Strategic Analysis & Communications, are among the speakers from Marshall.

"We are excited to have the opportunity to share information on the capabilities and facilities our center can provide to our industry and government partners," said Stacy Counts, manager of the Marshall Partnerships Office. "This is the second year we've been able to hold this type of collaborative forum and have added items to this year's agenda that were requested at last year's event."

The forum begins at 8 a.m. at the Davidson Center and the afternoon breakout panel discussions will begin around 2:30 p.m. in the Education Training Facility located on the U.S. Space & Rocket Center's campus.

For more information on the Marshall Collaboration Forum, visit [here](#).

Ridinger is a public affairs officer in the Office of Strategic Analysis & Communications.

'Tis the Season for the 2013 Marshall Center Holiday Celebration on Dec. 12

The [Marshall Exchange](#) is getting ready to deck the halls for the 2013 Marshall Space Flight Center Holiday Reception. On Dec. 12, all Marshall team members are invited to the Activities Building 4316 from 3-5 p.m. to celebrate the holiday season.

Door prizes will be given away and winners must be present to win. Musical entertainment will be provided by Marshall team members Matt Smith, Robert Polsgrove, Richard Stroud, and Lawrence Jones, all of the Propulsion Systems Department;

David Hohn, Chief Engineers Office; Andres Almeida, Office of the Deputy Director; Carlos Barreto, Spacecraft & Vehicle Systems Department; and Wayne Gamwell, Materials & Processes Laboratory. The [Trinity Handbell Quartet](#) from Trinity United Methodist Church will ring in the entertainment finale.

Festive food and spirits will be available to guests, and astronaut T.J. Creamer will join in the celebration as well.

Seventh Annual Science & Technology Jamboree to be held Dec. 6

The seventh annual Science & Technology Jamboree – in which team members can show off their science work to NASA's Marshall Space Flight Center community -- will be held Dec. 6. The event will be from 9 a.m. to noon, at the National Space Science and Technology Center on Sparkman Drive in Room 4078.



Obituaries

Barbara R. Facemire, 68, of Guntersville, died Oct. 25. She retired from the Marshall Center in 1999 as a chemist. She is survived by her husband, Jon Facemire.

David H. Newby, 93, of Guntersville, died Nov. 19. He retired from the Marshall Center in 1973 as a director of administrative and program support.

Edna F. Amos, 79, of Elora, Tenn., died Nov. 28. She retired from the Marshall Center in 1994 as a systems analyst. She is survived by her husband, Charles D. Amos.